

Reynolds, P., D. Smith, E. Satariano, C. Perkins and L. Bernstein (1992). Cancer incidence near the Santa Susana Field Laboratory: 1978-1989, Environmental Epidemiology Section, California Department of Health Services.

EXECUTIVE SUMMARY

In 1948, Rocketdyne began operating the Santa Susana Field Laboratory (SSFL), located at the southeastern border of Ventura County. Since that time the SSFL has been engaged in a variety of federally-supported research and development activities including the operation of nuclear reactors, the handling of plutonium, rocket engine testing and other activities involving radioactive and other toxic materials. The United States Department of Energy (DOE) and its predecessor agencies have been a primary source of support for these activities. The use of toxic and radioactive substances at the SSFL has been of concern to some area residents and organizations for many years.

In January, 1991, the California Department of Health Services (DHS) issued a preliminary statistical report suggesting that a higher than usual number of bladder cancer cases were diagnosed in one time period (1983-1987) among residents of some areas on the Los Angeles County side of the SSFL. This report included recommendations for further analysis. Public comment on the report included additional recommendations. These were:

1. Limit analyses to invasive cancers among non-Hispanic Whites to reflect the population near the SSFL, and determine whether the results are similar for males and females;
2. Include data from Ventura County;
3. Add more recent years of data, if available;
4. Include additional types of cancer that might be associated with radiation exposure.

Methods of Analysis

This report uses two methods of analysis in order to take advantage of the more detailed and historical data available for Los Angeles County than are available for Ventura County.

For Los Angeles County, data available from 1978-88 were used in conjunction with special population estimates for the area near the SSFL to compare cancer rates among non-Hispanic Whites living near the SSFL to those rates for the county as a whole. These rate ratios ("Standardized Incidence Ratios") are presented for the same geographic area near the SSFL as in the 1991 preliminary report, and include one additional year of data (1988).

In Ventura county, cancer data are currently available only for 1988 and 1989. There are no special estimates of the population in Ventura near the SSFL that could be used to calculate cancer rates for these years. Instead, this report presents information on the proportion of cancer

types diagnosed during 1988-89 among Ventura County residents living near the SSFL, compared to the proportion of those cancers among all other Ventura County residents ("Proportional Incidence Ratios"). For 1988-89, a similar analysis was conducted for Los Angeles County and both counties combined.

Results

Very radiosensitive cancers were not more common among residents near the SSFL in any of the time periods examined or geographical comparisons made. Somewhat higher, and somewhat lower, incidence of some cancer types was seen among residents near the SSFL, but there was not consistent pattern between residents of the two counties, or between men and women. The rate of bladder cancer was higher in 1983-88 among men, but not women, who lived in Los Angeles County near the SSFL than in the County as a whole. It was not higher in the earlier time period (1978-82). Comparing the two counties during 1988-89, the proportional incidence of bladder cancer was somewhat higher among Los Angeles County residents living near SSFL, but somewhat *lower* among nearby Ventura County residents.

Men living near the SSFL in Ventura County had a higher proportion of lung cancers than men living elsewhere in the County, but women did not, nor did either men or women near the site in Los Angeles County. Cases of all types of cancer for which radiation may be one cause were somewhat more common among men living near the SSFL in both counties, but were not more common among women living in either county.

All epidemiology studies have some limitations. For these analyses, there was not information on length of residence near the SSFL, nor on people who once lived nearby but were diagnosed with cancer after moving away. Environmental, occupational and lifestyle factors among the individuals with cancer were also unavailable. The relatively small number of cases of cancer in the five-mile radius during the years examined also limits the ability to find risks that may exist. These limitations should be kept in mind, but do not change the overall conclusions of the report.

Conclusions

These follow-up analyses suggest that people living near the SSFL are not at increased risk for developing cancers associated with radiation exposure. The findings are consistent with the earlier DHS report that indicated an increase in the incidence of bladder cancer in people living in Los Angeles County near the SSFL, although this increase appears to be restricted to men in Los Angeles County only. There was also an increased proportion of lung cancers among Ventura men. Lack of an increase in the most strongly radiosensitive cancers suggests causes other than radiation. Because lung and bladder cancers tend to be cancers that are strongly associated with other risk factors (smoking and non-radiation occupational exposures), it is important to consider these alternative explanations when initiating the DOE-sponsored worker health study among Rocketdyne employees.